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Joseph V. Brady and Jack D. Findley

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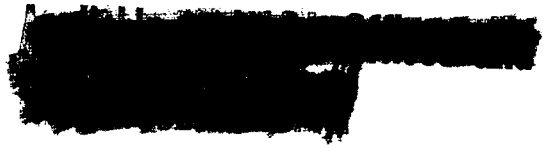

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Title: NASA GRANT NO. NsG 189-61

"Behavioral Research and Experimental Analysis of Complex Behavioral Repertoires Under Full Environmental Control"

Responsible Investigators:

Dr. Joseph V. Brady and Dr. Jack D. Findley

Department of Psychology
University of Maryland
College Park, Maryland

Beginning Date:

August 1, 1961

Duration:

Two Years

[redacted]

Background and Research Objectives

In October, 1961 a space research laboratory was established within the Department of Psychology, University of Maryland supported by the funds of Grant No. NsG 189-61. Description of the facilities of this laboratory and the specific research conducted has been presented in status reports covering the periods, October 1, 1961 to March 31, 1962, April 1, 1962 to Spetember 30, 1962, and from August 1, 1962 to January 30, 1963. The research objectives of this laboratory, as reported in previous status reports, have been focused upon the experimental analysis of complex behavioral repertories as pertains to and in support of behavioral factors involved in present and anticipated space flight. The work has emphasized in large measure the use of chimpanzees and other sub-human primates, pursuing such problems as the maintenance of long-term performance under full environmental control, specific analysis of effeciency factors in the organization of complex behavior, the role of social factors and interactions, and in general, the problem of extending present techniques to applications with man. During the period coveredby this report, many of the specific experiments conducted with primates were either completed or approaching terminal stages. These experiments were generally of a long-term nature, lasting in several instances in excess of six months. The specific results of these experiments will be reported subsequently by research publications either now in press or in preparation.

In the last status report, emphasis was given to the description of an experimental chamber designed to permit intensive measurment of the human behavior during extensive periods of confinement and isolation. Since this report, an experiment has been completed in which the behavior of a human subject was examined over a continuous 5 month period. A technical account of the results of this experiment together with recommendations pertaining to future research and space applications is enclosed as part of the present report. In addition, available reprints of other completed work have been enclosed as part of this report.

Research Publications and Presentations

Ames, L. A pulser device for automatic programming, J. exp. Anal. Behav. (in press)

Brady, J.V. Psychophysiology of emotional behavior. In A. J. Bachrach (Ed) Experimental Foundations of Clinical Psychology.

Findley, J.D. An experimental outline for building and exploring multi-operant behavior repetoires, J. exp Anal. Behav., Monograph #1, 1962.

Findley, J.D. Detecting and coding the behavior of animals in a multi-enclosure, programmed environment. Paper in Bio-Telemetry, Pergaman Press, New York, 1963.

Findley, J.D. and Weissman, N. Counting behavior in the baboon, J. exp. Anal. Behav., (in press)

Findley, J.D., Zimmerman, J. and Schuster, C. Second-order avoidance behavior under 24-hour control experiments. Science (in press)

Findley, J.D. and Pliskoff, S. Some effects of impending schedule changes on low rate and fixed ratio performance, Psychol. Rec., (in press)

Findley, J.D. Continuous DRL performance as a function of second-order conditioned reinforcement. J. exp. Anal. Behav., (in press)

Findley, J.D. Establishment and maintenance of S-Delta avoidance in the chimpanzee, J. exp. Anal. Behav., (in press)

Hodos, W., Ross, G. and Brady, J.V. Complex response patterns during temporally spaced responding, J. exp. Anal. Behav., 1962, 5, 473-479.

Perey-Cruet, J., Tolliner, G., Dunn, G., Marvin, S. and Brady, J.V. Concurrent measurement of heart rate and instrumental avoidance behavior in the rhesus monkey, J. exp. Anal. Behav., (in press)

Ross, G., Hodos, W. and Brady, J.V. Electroencephalographic correlates of temporally spaced responding and avoidance behavior, J. exp. Anal. Behav., 1962, 5, 467-472.

Findley, J.D. and Pliskoff, Stanley S. Analysis of an adjusting multiple schedule, (in preparation)

Findley, J.D. Preference for immediate versus delayed reinforcement in the chimpanzee as a function of differential work requirements, (in preparation)

Pliskoff, Stanley S. Rate-change effects with equal potential reinforcements during the "warning stimulus". J. exp. Anal. Behav., 1963, 6, 557-562.

Migler, B.M. and Brady, J.V. Timing behavior and conditioned fear, J. exp. Anal. Behav., (in press), 1963

Migler, B.M. Artifacts of averaging using the individual organism, J. exp. Anal. Behav., (in press), 1963

Coulborne, John Escape from situational anxiety by self-inflicted punishment in humans, (in preparation)

Findley, J.D., Migler, B. and Brady, J.V. A long-term study of human performance in a continuously programmed environment.(Technical Report to NASA, and in preparation for publication), 1963